

**Question 1:****A- Choose the correct answer:**

- 1- Complete body fossil of insect is found in .....(ammonite – amber – snow – cast)
- 2- Meteors are formed in .....(troposphere – stratosphere – mesosphere – ozone)

**B-Locate** the position of the following element in the modern periodic table:

- 1-  ${}_{19}\text{K}$

**Question 2:****A-Give reason for:**

- 2-The atomic size increases through the group.

**B-Write** a balanced chemical equations representing the following:

- 1-Magnesium with hydrochloric acid.

**Question 3:****A-Complete:**

- 1- Ultraviolet rays have .....effect while infrared rays have .....effect.
- 2- Archaeopteryx is a link between ..... and .....

**B-Give one use for:**

- 1-Van-Allen belts.

**Question 4:****A-Write scientific term:**

- 1- Traces and remains of old living organisms.
- 2- A phenomenon that appears as bright light coloured certain.

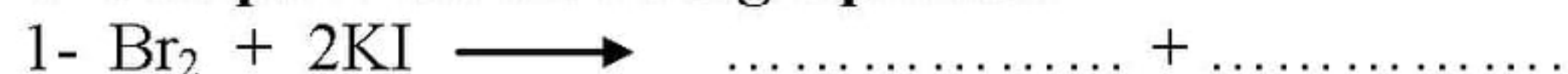
**B-Find** the temperature at the top of a mountain its height is 4 km, if the temperature at the sea level is 22°C.**Good luck & Have fun ☺****Model exam -2****Question 1:****A- Choose the correct answer:**

- 1- .....is the main reason of recent extinction. (Volcanoes-Glacial age-overhunting)
- 2- The measuring unit of atmospheric pressure is ..... (bar – Dobson – Km)



B-Compare between simple and complicated ecosystems?

**C-Complete the following equation:**



**Question 2:**

**A-Correct the underlined words:**

- 1- Mammoth is one of the examples of petrified bfossils.
- 2- Coral fossils indicate that the environment was hot and rainy tropical environment.

**B-Calculate** the height of a mountain if the temperature at its base is 20C and at its top is -12C.

**C-What will happens if:**

- 1- Adding water to magnesium oxide?

**Question 3:**

**A-Write scientific term:**

- 1- It is a region in which atmospheric envelope is inserted with the outer space.
- 2- They are safe areas made to protect endangered species.

**B-Mention the one function for:**

- 1-Ionosphere.

**Question 4:**

**A-Complete:**

- 1- Water can dissolve some covalent compounds such as .....because it can form .....bond with water molecules.
- 2- .....is used to determine possible day weather while .....used to measure the elevation of planes.

**B-Give reason for:**

- 1- Adding drops of acid to water in the electrolysis of water?

**C-mention** one harm for the following:

- 1-Global warming.

**Good luck & Have fun ☺**

### **Model exam -3-**

**Question 1:**

**A- Choose the correct answer:**

- 1- Atmospheric pressure is the .....of air column on unit area. (mass – volume - weight)
- 2- Ozone layer is found in .....(troposphere – stratosphere – mesosphere)
- 3- .....is an example of microfossils. (Mammoth – Ferns – Foraminifera)

**B-Give reason for:**

Sodium is kept under the surface of kerosene?

Liquid nitrogen is used to preserve eye cornea?

**C-What is meant by:**

1-Polar compounds.

**Question 2:**

A-Correct the underlined words:

1- Infrared rays have a chemical effect.

2- Panda pear is from extinct species.

**B-Mention one example for:**

1- Complete body fossil.

2- An alkali metal.

**C-What happens when:**

1- Adding litmus solution to carbonic acid.

**Question 3:**

**A-Complete the following:**

1- There are three types of ultraviolet rays, far UV and ..... and .....

2- The Thickness of ozone layer is .....km while normal atmospheric pressure at sea level is .....millibar.

3- ..... + .....  $\longrightarrow$   $\text{MgCl}_2 + \text{H}_2$

**B-Locate** the position of the following elements in the modern periodic table:

1- 13Al      2-10Ne

**Question 4:**

**A-Write scientific term:**

1- A layer that protects us from harmful ultraviolet rays.

2- It is a replica of the internal details of an old living organism.

**B-Write a balanced chemical equations:**

2-Reaction between bromine and potassium iodide.

3-The electrolysis of water.

**C-Calculate** the temperature at the top of a mountain of height = 6000 m and the temperature at sea level is 12C.

**Good luck & Have fun ☺**

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### **Model exam -4-**

**Question 1:**

**A- Choose the correct answer:**

1- The ozone hole increases every year in .....(March – October – September)

2- The hottest layer is ..... (Thermosphere – Mesosphere – Troposphere)

3- Fossils are always found in .....rocks. (igneous – sedimentary – metamorphic)



**B-Write the chemical equation for:**

1- Dissolving magnesium oxide in water.

**C-Calculate** the height of a mountain if the temperature at its foot is 29°C and at its top is (-10°C).

**Question 2:**

**A-Put ( √ ) or ( X ) and correct the wrong one:**

1- Pilots prefer to fly in mesosphere.

( )

2- Panda is from endangered species.

( )

**B-Explain the effect of extinction of species on:**

1- Simple ecosystem.

2-Complicated ecosystem.

**Question 3:**

**A-Complete the following:**

1- The bond between oxygen and hydrogen in water molecule is .....while the bond between water molecules is .....

2- .....and ..... Are from green house gases.

**B-Give reason for:**

1- Elements of group 1A are known as alkali metals?

**C-What is the importance of:**

1- Hoffman's voltameter.

**Question 4:**

**A-Write scientific term:**

1- The process of replacing the wood material of trees to form petrified wood.

2- The bond that is responsible for abnormal properties of water.

**B-What is meant by:**

1-Fossils.

**C-Locate** the position of these elements in the modern periodic table:

1-  $_{11}\text{Na}$

2-  $_{18}\text{Ar}$

**Good luck & Have fun ☺**

**Model exam -5-**

**Question 1:**

**A-Complete the following:**

1- Mendeleev arranged elements according to ..... while Moseley arranged elements according to.....

# Final examination of some governorates

## (1) Giza governorate

### Question 1

#### A- Complete the following statement:

- Elements in group (1A) are called alkali metals as their elements react with .....forming .....solution
- The heights temperature layer in the atmosphere is .....and the lowest temperature layer is .....
- From examples of complete body fossils are .....and .....
- By increasing the atomic number, the value of metallic property ..... In the group of the periodic table.
- Elements of group (B) are called ..... elements and they appear from period .....
- Fluorine and chlorine exist in .....state, while iodine exists in .....state.
- There are .....bond between water molecule.

**B) Find the temperature at a point of height 2000 meters above the sea level if the temperature at sea level is 23 °C**

#### C) Give reason for:

1. The atomic size decreases in periods by increasing the atomic number.

.....

2. Liquefied nitrogen is used in preservation of cornea

.....

- 3- Don't store tap of water in empty plastic bottle.

.....

- 4- Pilots prefer to fly their planes at the lower part of stratosphere layer.

.....

- 5- Continuous decrease in the number of living organisms without compensation until all die out.

.....

## Question 2

### A. Write the scientific term:

1. The traces and remains of old living organisms which are preserved in the sedimentary rocks.
2. The ability of the atom in a covalent molecule to attract electrons of the chemical bond towards itself.
3. The kind of bond which binds oxygen atom with hydrogen atom in water molecule.
4. The weight of air column of an atmospheric height on a unit area.
5. A phenomenon that occurs due to the increase in the percentage of CO<sub>2</sub> gas and leads to an increase in the planet Earth's temperature.

### B- Put ( T ) or ( F):

1. Mammoth and dinosaur are extinct animals. (     )
2. Halogens are monovalent elements. (     )
3. Mesosphere is the layer which is responsible for burning of meteors. (     )
4. Solutions of metal oxides turn blue litmus paper into red. (     )



**C- Find the temperature at a point of height 2000 metres above sea level if the temperature at sea level is 23°C.**

.....

.....

### Question 3

**A.Mention one use of:**

1. Cobalt 60 .....
2. Altimeter.....
3. Metalloids. ....
4. Ozone hole.....
5. Global warming phenomenon.....

**B-Locate the position of the following elements in the modern periodic table :**

- |                     |                  |                     |
|---------------------|------------------|---------------------|
| 1. $^{20}\text{Ca}$ | 2. $^2\text{He}$ | 3. $^{17}\text{Cl}$ |
|---------------------|------------------|---------------------|

**C- Give example of:**

- 1- An endangered animal.....
- 2- An element from group (1A) .....
- 3- A greenhouse gas.....
- 4- An extinct animal.....
- 5- A complete body fossil.....

## (2) Giza Governorate

**Answer the following questions:**

### **Question 1**

#### **A- Complete the following sentences :**

1. Ultraviolet radiation has a .....effect and infrared radiation has a..... effect.
2. When the density of greenhouse gases increases in the Earth's atmospheric envelope, it allows the passage of .....
3. Mendeleev arranged the elements according to their ..... while Moseley arranged them according to .....
4. Archaeopteryx represents the link between .....and .....

#### **B-Mention one use of each of the following:**

1. The radioactive cobalt 60
2. Silicon.

**C- If the temperature at the base of mountain Everest is 20°C. Calculate the temperature at its top if the mountain height is 8 km.**

.....

### **Question 2**

#### **A- Give reasons for:**

1. Presence of hydrogen bonds between water molecules.



2. Importance of fossils in petroleum exploration.

.....

3. Occurrence of greenhouse effect phenomenon.

.....

4. Alkali metals are kept under kerosene surface in the lab.

.....

**B-Write the balanced chemical equations representing each of the following:**

1. Chlorine gas with potassium bromide solution.
2. Magnesium with hydrochloric acid.

**C- If you have an element with 2 electrons in the first energy level and 7 electrons in the second energy level.**

1. What is the atomic number of this element? .....
2. Mention if it is a metal or a non-metal. ....

**Question 3**

**A- Write the scientific term:**

1. The block that contains the series of lanthanides and actinides.
2. Fossils of organisms that had lived for a short period of time in the past and had a wide geographic distribution.
3. The ability of atom in the covalent molecule to attract electrons of the chemical bond towards itself.

**B. What happens when .....**


1. An organism is buried fast after death in snow.

.....

5. We go from up to down inside the group (1A).

.....

**C-Compare between:** Complicated ecosystem and simple ecosystem.

Complicated ecosystem	Simple ecosystem.
	

**Question 4**

**A. Choose the correct answer:**

1. The scientist..... discovered the main energy levels in the atom.

- a. Bohr                      b. Mendeleev                      c. Hofmann

2- .....protectorate is the first established natural protectorate in Egypt.

- a. Wadi El-Hetan                      b. Saint Cathrine                      c. Ras Mohamed

3. Sodium oxide is from oxides.

- a. acidic                      b. nonmetallic                      c. basic



**B. What is meant by ... ?**

1. Chemical activity series.
2. Semi-metals.

**C- Calculate the position of these elements in the modern periodic table:**

1.  $^{10}\text{Ne}$
2.  $^{20}\text{Ca}$



## Examination for our sons abroad

(2018)

**Answer the following questions:**

### Question 1

**(A) Complete the following sentences by suitable words:**

- 1- Most of weather phenomena occur in ..... layer while satellites swim through.....
- 2- Archaeopteryx represents the link between.....and.....

**(B) Find the atomic number for the following elements:**

- 1-Element X lies in the first period and zero group.
- 2-Element Y lies in the second period and 3A group.

### Question (2)

**(A) Choose the correct answer from between brackets:**

- 1- Meteors are formed and burn in..... (Troposphere - Thermosphere - Stratosphere - Mesosphere)
- 2- Sodium oxides are from... .....oxides. (amphoteric - acidic - nonmetallic - basic )

### Question (3)

**(A) Write the scientific term for each of the following:**

- 1- A type of radiation that is absorbed in ozone layer to protect the earth planet
- 2-Remains of old organisms that lived in the past for a certain period and then became extinct.



**(B) Give reasons for:**

- 1- Fossils are important in petroleum exploration.

.....

- 2- Don't store the tap water in empty plastic bottles of mineral water.

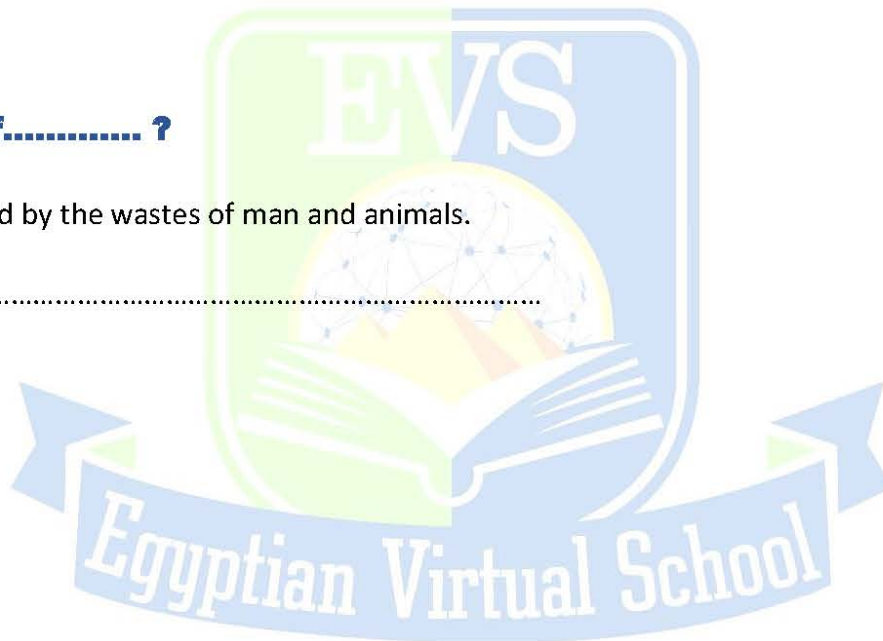
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**Question (4):**

**What happen if..... ?**

1. Water is polluted by the wastes of man and animals.

.....



## Examination for our sons abroad (2016)

**Answer the following questions:**

**Question (1):**

**A) Complete the following sentences:**

- 1- Mendeleev arranged the elements ascendingly according to their atomic. .... While Moseley arranged them ascendingly according to their atomic .....
- 2- The hottest atmospheric layer is ..... , but the coldest atmospheric layer is .....
- 3- .....are Traces and remains of organisms that lived in past and preserved in sedimentary rocks.

**(B) Mention one use of each:**

- 1- The radioactive cobalt 60.

**Question (2):**

**(A) Write the scientific term for each of the following:**

- 1- Continuous decrease in numbers of species members without compensation until all die out.
- 2- Is the ability of an atom in the covalent compound to attract the bonded electrons to itself.
- 3- Traces and remains of organisms that lived in the past and were preserved in sedimentary rocks.

**(B) Give reasons for:**

- 1- The petrified wood considered as fossil.
2. Pure water has neutral affect in litmus paper.



**Question three:**

**(A) Choose the correct answer of each of the following:**

- 1- Stratosphere layer contains the major amount of (Chlorine - Ozone - Fluorine - Mercury)
- 2- The element in group (1 A) are known as . ..... (alkaline metal - alkaline earth metal - transitional - halogens)
- 3- ..... is considered from halogens. (Potassium - Chlorine - Helium - Argon)
- 4- The transition element starts to appear from period..... (one- two- three -four)

**(B) What happened if.....:**

- 1- Absence of a species of the living organisms from the complicated ecosystem.

**Question four:**

**(A) Put ( T ) Or ( F ) in front of the following statements**

- 1- Rutherford discovered that the nucleus of atom contains positively charged protons.
- 2- The air moves vertically in to troposphere.
- 3- Freon used as a cooling material in air conditioning sets.

**(B) Calculate the temperature: at the top of the mountain its height is 2km if the temperature at its base is 26°C.**

Good Luck!

**A- Choose the correct answer:**

- B-Locate the position of the following elements in the modern periodic table:**

- C) What is meant by :

- Question (2): A – Correct the underline word:**

- 1

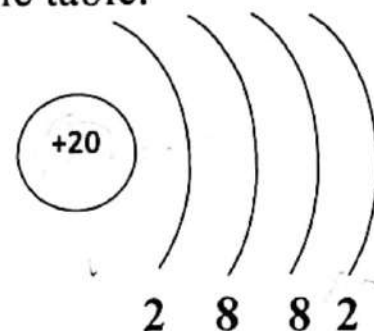


**B - Mention one difference between the following:**

- ✓1- Basic oxides and acidic oxides.
- ✓2- Mesosphere layer and thermosphere layer.
- ✓3- Coral fossils and ferns fossils.

**C - The opposite figure represents the electronic configuration of an element in the modern periodic table, mention:**

- ✓1) The location of this element in the modern periodic table.
- ✓2) The type of this element.
- ✓3) The type of ion of this element.



**Question (3): A -Complete the following:**

- ✓1) Fossils are used in .....exploration and determination the age of.....
- ✓2) .....are used in extinguishing fires and.....is used as coolant in cooling devices.
- ✓3) Ozone layer is found in..... layer, while meteors are burnt in.....
- ✓4) Archaeopteryx represents link between.....and.....
- ✓5) The bond between hydrogen atom and oxygen atom in water molecule is.....bond, while bonds among water molecules are.....bonds.
- ✓6) Fluorine exists in ..... state, while iodine exists in..... state...

**B- Give reasons for:**

- ✓1) Ionosphere plays an important role in wireless communications.
- ✓2) Pure water has a neutral effect on litmus solution.
- ✓3) Cobalt 60 is used in food preservation.
- ✓4) Troposphere organizes earth's temperature.

**Question (4):**

**A- Write the scientific term indicated by the following statement:**

- 1) A kind of elements in which their valency electrons contain more than 4 electrons.
- 2) The continuous increase in the average temperature of the air near the surface of earth.
- 3) The series of elements located below the modern periodic table.
- 4) The continuous decrease in numbers of individuals from the same species of living organisms without compensation with birthing.
- 5) The block that contains the transition elements.
- 6) The elements have both properties of metals and non-metals.

**B- Mention one example for:**

- 1) Endangered plant.
- 2) Petrified fossil.
- 3) Extinct bird.
- 4) cast fossil.

**C- What is the importance of:**

- 1) Nummulites fossils.
- 2) Liquefied sodium.
- 3) Altimeter.
- 4) Hofmann's voltameter.



**Question (1) A- Choose the correct answer: (6)**

- The transition elements starts from period .....  
 (a) 6 (b) 5 (c) 4
- What is the atomic numbers of element located in the third period and group 2A ?  
 (a) 20 (b) 12 (c) 8
- The device used in measuring the altitude from the earth's surface is.....  
 (a) altimeter (b) aneroid (c) voltameter
- .....is the region between stratosphere and mesosphere.  
 (a) Tropopause (b) Stratopause (c) Mesopause
- Elements which have atomic numbers.....are called halogens.  
 (a) 9, 17 (b) 2, 10 (c) 11, 19.
- Drinking water which contain high concentration of.....causes death of brain cells.  
 a) Mercury b) cobalt 60 (c) Lead

**B-Locate the position and the type of the following elements in the modern periodic table: (6)**

- $^{19}\text{K}$
- $^8\text{O}$

**What is meant by: (2)**

- Extinction
- Chemical activity series

**Question (2): A – Correct the underline word: (4)**

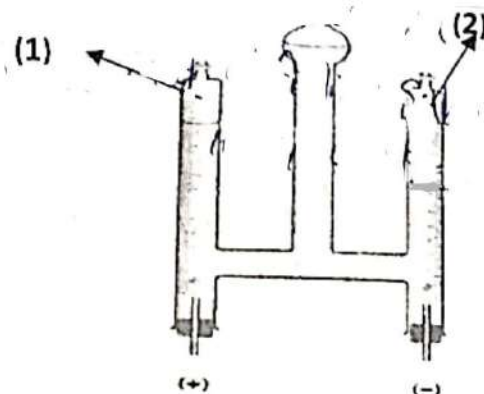
- Meteors burn in the thermosphere.
- Liquefied nitrogen is used in food preservation.
- Bromine is the strongest non-metallic element.
- Troposphere is the coldest layer.

**B - Mention one difference between the following: (4)**

- Basic oxides and acidic oxides.
- Mesosphere layer and thermosphere layer.
- Copper and magnesium using HCL.
- Mendeleev periodic table and Modern periodic table

**C - Look at the opposite figure then answer: (6)**

- Label the next figure (1) (2) ...
- What is the volume of gas number (2) if the volume of the gas number (1) is  $10\text{ cm}^3$  ?
- Complete the chemical equation which illustrate the chemical reaction.



**Question (3): A -Complete the following: (8)**

- 1) Ammonia is considered one of .....compound because the difference in electronegativity between its atoms are .....
- 2) .....and .....are from recently extinct living organism.
- 3) Ozone layer is found in .....layer, because it contains a suitable amount of .....

As we go up 1 km above the sea level, the temperature decreases with ... .....  $^{\circ}\text{C}$  in troposphere layer.

- 5) The bond between hydrogen atom and oxygen atom in water molecule is: .....bond, while bonds among water molecules are. ....bonds.
- 6) The satellite floats around the Earth in' .....layer, while....layer reflects radio waves.
- 7) ..... + .....  $\longrightarrow$   $\text{H}_2\text{CO}_3$
- 8)  $\text{Cl}_2$  + ....KI  $\longrightarrow$  .....+.....

**B- Give reasons for: (6)**

- 1) The lower part of the stratosphere is suitable for flying airplanes.
- 2) Alkali metals are kept under kerosene or paraffin oil.
- 3) Troposphere organizes earth's temperature.

**Question (4): A- Write the scientific term indicated by the following statement: (7)**

- 1) A phenomenon looks like a colorful light curtain seen in the two poles.
- 2) The continuous increase in the average temperature of the air near the surface of earth.
- 3) A kind of water pollution resulting from mixing animals and human wastes with water.
- 4) The first natural protectorates in Egypt.
- 5) A type of ultraviolet radiation that is absorbed completely (100%) by the ozone layer ..
- 6) The elements have both properties of metals and non-metals.
- 7) Thinning or losing parts of ozone layer.

**B- Mention one example for: (3)**

- 1) Endangered species.
- 2) Greenhouse gases.
- 3) Old (mass) extinct species.

**C- What is the importance of : (4)**

- 1) Van Allen belts.
- 2) Cobalt 60.
- 3) Dobson.
- 4) Barometer.



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**B - Mention one difference between the following:**

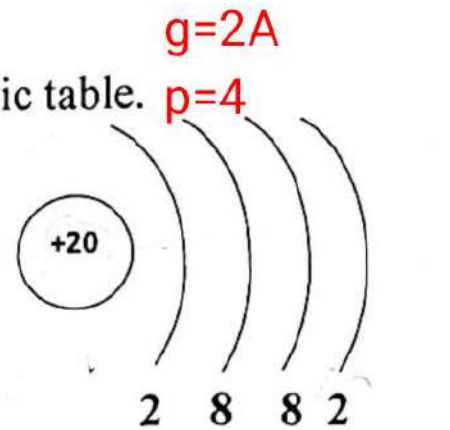
- ✓1- Basic oxides and acidic oxides. <sup>metal oxides</sup> basic some of them dissolve in water forming alkaline solutions  
<sup>non metal oxides</sup> acidic dissolve in water forming acidic solution
- ✓2- Mesosphere layer and thermosphere layer.  
<sup>coldest layer</sup> <sup>hottest layer</sup>
- ✓3- Coral fossils and ferns fossils. <sup>they lived in hot rainy tropical environment</sup>  
<sup>they lived in clear @ warm seas</sup>

**C - The opposite figure represents the electronic configuration of an element in the modern periodic table, mention:**

✓1) The location of this element in the modern periodic table.

✓2) The type of this element. **metal**

✓3) The type of ion of this element. **positive ion**



**Question (3): A - Complete the following:**

✓1) Fossils are used in ..... exploration and determination the age of.....  
<sup>petroleum</sup>

✓2) **halons**.....are used in extinguishing fires and.....is used as coolant in cooling devices.  
<sup>chlorofluorocarbon compound</sup>

✓3) Ozone layer is found in..... <sup>stratosphere</sup> layer, while meteors are burnt in. **mesosphere**

✓4) Archaeopteryx represents link between..... **birds** .....and..... **reptile**...

✓5) The bond between hydrogen atom and oxygen atom in water molecule is..... <sup>single covalent</sup> bond, while bonds among water molecules are..... <sup>hydrogen</sup> bonds.

✓6) Fluorine exists in .. **gas** ... state, while iodine exists in .. **solid** state...

**B- Give reasons for:**

✓1) Ionosphere plays an important role in wireless communications.

✓2) Pure water has a neutral effect on litmus solution.

✓3) Cobalt 60 is used in food preservation.

✓4) Troposphere organizes earth's temperature.

Question (4):

A- Write the scientific term indicate by the following statement:

- 1) A kind of elements in which their valency electrons contain more than 4 electrons. **non metals**
- 2) The continuous increase in the average temperature of the air near the surface of earth. **global warming**
- 3) The series of elements located below the modern periodic table. **lanthanides and actinides**
- 4) The continuous decrease in numbers of individuals from the same species of living organisms without compensation with birthing. **.....f block**
- 5) The block that contains the transition elements. **extinction**
- 6) The elements have both properties of metals and non-metals. **d block**
- 7) The elements have both properties of metals and non-metals. **metalloids**

B- Mention one example for:

- 1) Endangered plant. **papyrus**
- 2) Petrified fossil. **petrified Wood**
- 3) Extinct bird. **dodo bird**
- 4) cast fossil. **fish cast**

C- What is the importance of:

- 1) Nummulites fossils.
- 2) Liquefied sodium.
- 3) Altimeter.
- 4) Hofmann's voltameter.





### Question (1) A- Choose the correct answer: (6)

- The transition elements starts from period .....  
 (a) 6 (b) 5 (c) 4
- What is the atomic numbers of element located in the third period and group 2A ?  
 (a) 20 (b) 12 (c) 8
- The device used in measuring the altitude from the earth's surface is.....  
 (a) altimeter (b) aneroid (c) voltameter
- .....is the region between stratosphere and mesosphere.  
 (a) Tropopause (b) Stratopause (c) Mesopause
- Elements which have atomic numbers.....are called halogens.  
 (a) 9, 17 (b) 2, 10 (c) 11, 19
- Drinking water which contain high concentration of.....causes death of brain cells.  
 a) Mercury b) cobalt 60 (c) Lead

### B-Locate the position and the type of the following elements in the modern periodic table: (6)

- ${}_{19}\text{K}$  (g=1A, P=4)
- ${}_{8}\text{O}$  (g=6A, P=2)

### C-What is meant by: (2)

- Extinction
- Chemical activity series

### Question (2): A – Correct the underline word: (4)

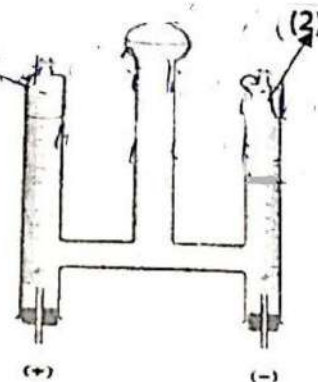
- Meteors burn in the thermosphere. **mesosphere**
- Liquefied nitrogen is used in food preservation. **eye cornea**
- Bromine is the strongest non-metallic element. **fluorine**
- Troposphere is the coldest layer. **mesosphere**

### B - Mention one difference between the following: (4)

- Basic oxides and acidic oxides.
- Mesosphere layer and thermosphere layer.
- Copper and magnesium using HCL. **copper no reaction**  $\text{Mg} + 2\text{HCl} \rightarrow 2\text{H}_2 + \text{MgCl}_2$
- Mendeleev periodic table and Modern periodic table  
**arrange elements accordingly according to atomic weight**

### C - Look at the opposite figure then answer: (6)

- Label the next figure (1) **oxygen** (2) **hydrogen**
- What is the volume of gas number (2) if the volume of the gas number (1) is 10 cm<sup>3</sup>? **20 cm<sup>3</sup>**
- Complete the chemical equation which illustrate the chemical reaction.





**Question (3): A -Complete the following: (8)**

- 1) Ammonia is considered one of **polar** compound because the different in electronegativity between its atoms are **relatively high**
- 2) **dodo bird**...and **Quagga**...are from recently extinct living organism. **oxygen molecules**
- 3) Ozone layer is found in **stratosphere** layer, because it contain a suitable amount of **oxygen molecules**

As we go up 1 k above the sea level, the temperature decrease with **6.5**  $^{\circ}\text{C}$  in troposphere layer.

- 5) The bond between hydrogen atom and oxygen atom in water molecule is **single covalent** bond, while bonds among water molecules are **hydrogen** bonds.
- 6) The satellite float around the Earth in **exosphere** layer, while **ionosphere** layer reflects radio waves.
- 7)  **$\text{CO}_2 + \text{H}_2\text{O} \longrightarrow \text{H}_2\text{CO}_3$**
- 8)  **$\text{Cl}_2 + 2\text{KI} \longrightarrow 2\text{KCl} + \text{I}_2$**

**B- Give reasons for: (6)**

- 1) The lower part of the stratosphere is suitable for flying airplanes.
- 2) Alkali metals are kept under kerosene or paraffin oil.
- 3) Troposphere organizes earth's temperature.

**Question (4): A- Write the scientific term indicate by the following statement: (7)**

- 1) A phenomenon looks like a colorful light curtain seen in the two poles. **aurora phenomenon**
- 2) The continuous increase in the average temperature of the air near the surface of earth. **global warming**
- 3) A kind of water pollution resulting from mixing animals and human wastes with water. **biological water pollution**
- 4) The first natural protectorates in Egypt. **Ras Mohamed protectorate**
- 5) A type of ultraviolet radiations that is absorbed completely (100%) by the ozone layer .. **metalloids**
- 6) The elements have both properties of metals and non-metals. **metalloids**
- 7) Thinning or losing parts of ozone layer. **ozone hole**

**B- Mention one example for: (3)**

- 1) Endangered species. **panda bear**
- 2) Greenhouse gasses. **Carbon dioxide gas**
- 3) Old (mass) extinct species. **mammoth**

**C- What is the importance of : (4)**

- 1) Van Allen belts.
- 2) Cobalt 60.
- 3) Dobson.
- 4) Barometer.

### Question 1

Complete the following:

1. Mendeleev arranged the elements according to their ....., while Moseley arranged the elements according to their.....
2. The electronegativity of elements ..... in the group by ..... the atomic number.
3. .... form positively charged ions when they enter the chemical reaction.
4. Most of weather phenomena occurs in ..... layer.
5.  $\text{Mg} + \text{.....} \xrightarrow{\text{dil.}} \text{MgCl}_2 + \text{.....}$
6. Elements of (B) groups are called.....elements and they appear starting from period.....

### Question 2

a. Element (X) lies in period (4) in alkaline earth metals group and element (Y) lies in period (3) in halogens group :

1. What are the atomic numbers of X and Y ?
2. What is the kind of the compound produced from their combination ?  
(Write the chemical formulae).

b. Give reason for each of the following :

1. Water is more polar than ammonia.
2. The atomic size of Phosphorus ( $_{15}\text{P}$ ) is greater than that of Sulphur ( $_{16}\text{S}$ ).
3. The high boiling point of water

### Question 3

a. Write one use for :

1. Molten sodium 2. Silicon 3. Aneroid 4. Hofmann's voltameter

b. What is meant by : 1. Chemical activity series. 2. Van-Allen belts

- c. Explain why: 1. Elements of the same group have similar properties.  
2. Mesosphere layer is highly rarefied.

### Question 4

a. How can you differentiate chemically between each of the following:

- 1- carbon dioxide and magnesium oxide ( using litmus ).
- 2- Sodium and iron ( using water ).
- 3- Chlorine and iodine ( using KBr ).

b. Calculate the height in meter of a mountain, knowing that the temperature at its base is (25°C) and at its top is (- 10°C).

*Good Luck*





1st question:

Complete the following sentences:

- 1 Mendeleev organized the elements according to the similarity in .....
- 2 The ozone layer disperses the ..... rays away from the earth's surface.
- 3 From the extincted animals in the old ages ..... and .....
- 4 Sodium is kept under the surface of ..... so as not to react with .....

2nd question:

Choose the right answer:

- 1 The transitional elements start to appear from the beginning of the..... period.  
a- second                      b- third                      c- fourth                      d- fifth
- 2 The extinction of Tasmanian cat is because of .....  
a- overhunting                      b- the destruction of original inhabitant  
c- environmental pollution                      d- climatic changes
- 3 The second layer of the atmospheric envelope is called .....  
a- stratosphere                      b- thermosphere  
c- troposphere                      d- mesosphere
- 4 The snow crystal's shape is .....  
a- hexagon                      b- pentagon                      c- Octagonal                      d- quadrilateral
- 5 The fossils exist in the sedimentary rocks in the Mokattam Mountain are  
a- Ferns                      b- Coral                      c- Nummiulite                      d- all the previous
- 6 From the endangered species:  
a- The bold eagle,                      b- The passenger pigeon.  
c- Tasmanian.                      d- Dinosaur.

3rd question:

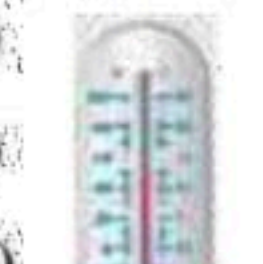
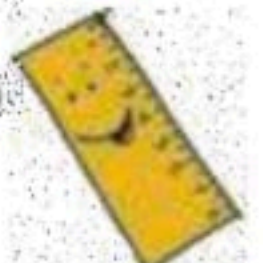
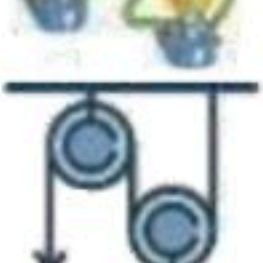
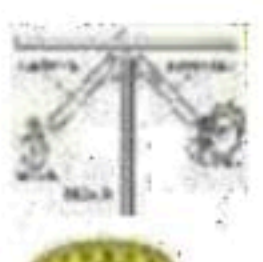
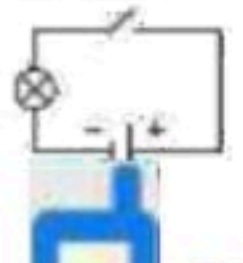
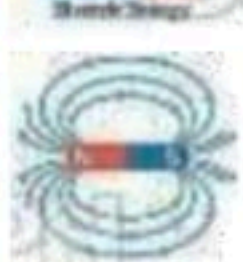
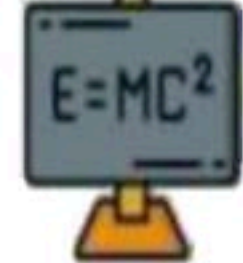
Give reasons for:

- 1 Liquefied nitrogen is used in preserving cornea.
- 2 The lower part of the stratosphere layer is suitable for airplanes flying.
- 3 Petrified wood is considered from fossils.

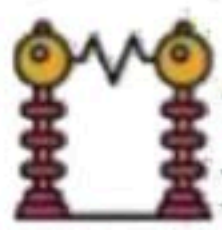
4th question:

Put (✓) in front of the right statement and (X) in front of the wrong ones in the following:

- 1 The elements of block "P" are organized in 5 groups. ( )
- 2 The index fossil indicates the age of the sedimentary rock. ( )
- 3 The halons are produced from supersonic airplanes. ( )
- 4 The altimeter is a device used to measure the altitude of planes on the knowledge of atmospheric pressure. ( )
- 5 The elements of group (1A) and (2A) are good conductors for heat and electricity. ( )
- 6 The atmospheric pressure decrease by increasing the altitude from the sea level. ( )







### Model Answer

#### Answer Q1

- 1- properties
- 2- harmful ultraviolet
- 3- dinosaur - mammoth
- 4- kerosene - moist air.

#### Answer Q2

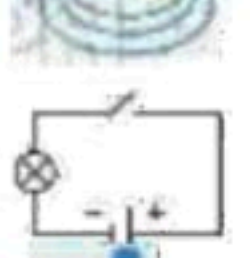
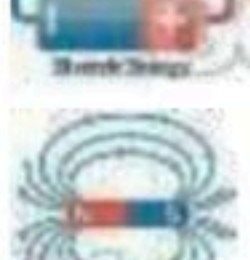
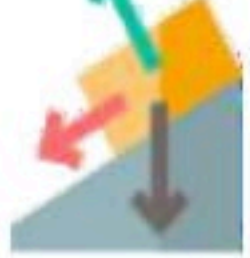
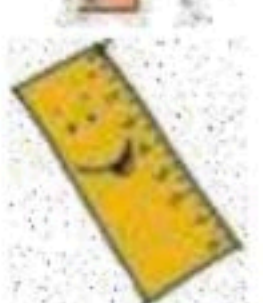
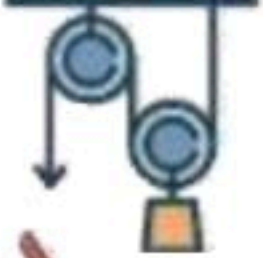
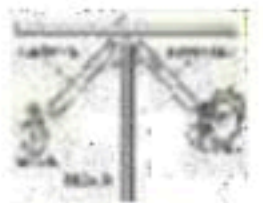
- 1) 1- fourth
- 2- Cancelled
- 3- stratosphere
- 4- hexagon
- 5- Nummiulite
- 6- the bold eagle

#### Answer Q3

- 1- because it has a low boiling point ( $-196^{\circ}\text{C}$ )
- 2- because the lower part of this layer doesn't contain clouds or weather disturbances and the air moves horizontally.
- 3- Because they give us details about the life of once an old plant.

#### Answer Q4

- 1- False
- 2- True
- 3- False
- 4- True
- 5- True
- 6- True







### Exam (2)



1st question:

A- Choose the right answer:

- 1 There are ..... bonds between water molecules.  
a- metallic      b- ionic      c- hydrogen      d- covalent
- 2 The air in the troposphere layer moves .....  
a- horizontally      b- vertically      c- inclined      d- no right answer
- 3 The volume of hydrogen gas evolving from water electrolysis equals..... the oxygen volume.  
a- that of      b- double      c- half      d- four times
- 4 The second layer of the atmospheric envelope is called .....  
a- thermosphere      b- stratosphere      c- troposphere      d- mesosphere

B- The element ( ${}_{17}\text{Y}$ ) from the elements of the periodic table; find:

- 1- Electronic distribution.
- 2- The group number.
- 3- The periodic number.

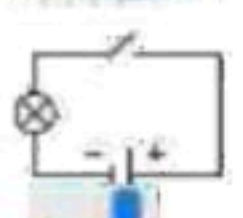
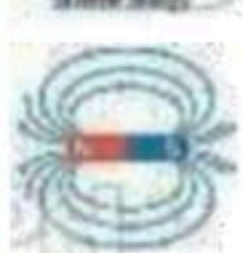
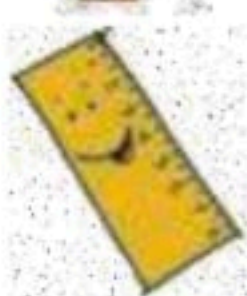
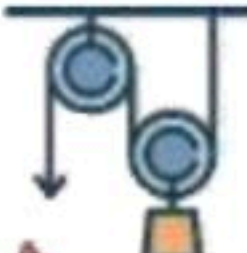
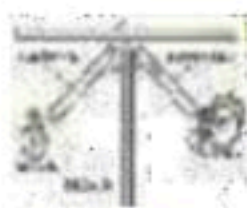
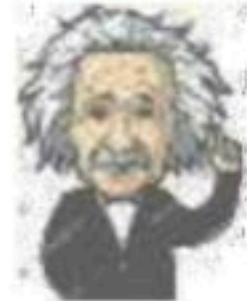
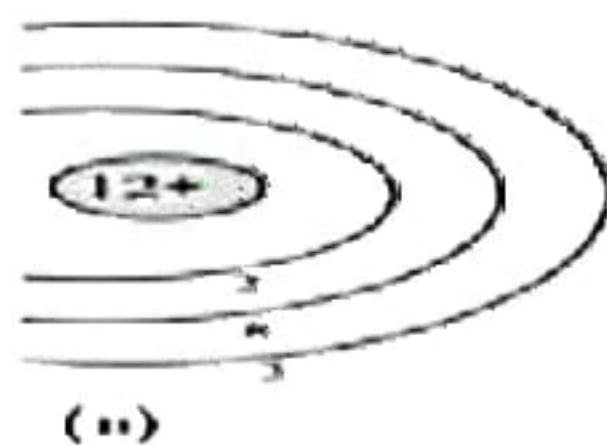
2nd question:

A- Put (✓) in front of the right statement and (X) in front of the wrong ones:

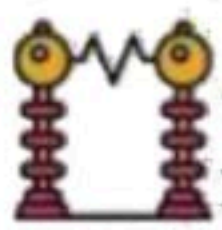
- 1 The earth alkalines are good heat conductors.
- 2 The atmospheric pressure decreases as the altitude from sea level increases.
- 3 As the atomic number increases the metallic property increases.
- 4 The index fossil indicates the age of sedimentary rocks.
- 5 The ionosphere is surrounded by two magnetic belts known as Van Ilene's belt.

B- See the figure then answer:

- 1 Which one of the two graphs represents a +ve ion?
- 2 Which one of the two graphs represents a neutral ion?
- 3 Indicate the position of the atom in the periodic table (period-group)



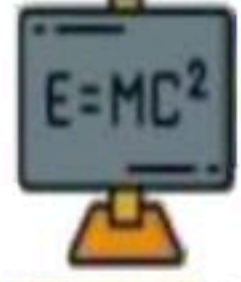




3rd question:

Write the scientific term for each of the following:

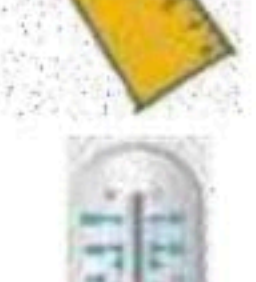
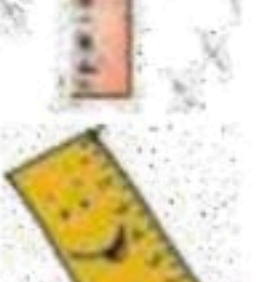
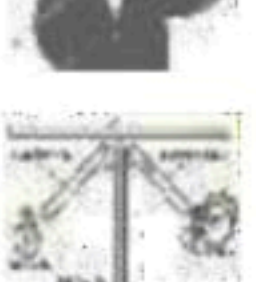
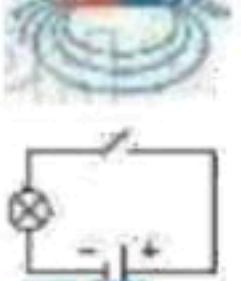
- 1 The continuous decrease in the number of individuals of the same species of living organisms without compensation until all individuals die.
- 2 A bird with small wings and short legs extincted from the Indian islands.
- 3 The ability of the atom in covalent molecule to attract the chemical; bond electrons to it.
- 4 Elements in block "S" and they are divalent and lie in the second group of the periodic table.
- 5 Safe places are specialized for protecting endangered species in their original inhabitant.



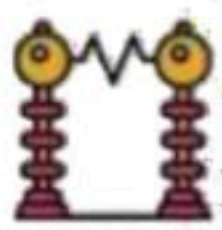
4th question:

Complete the following statements:

- 1 The electronegativity in the modern periodic table increases from ..... to ..... inside the same group.
- 2 The last level of metallic elements contain ..... than four electrons when the non-metallic elements contain ..... than four electron in their last level.
- 3 The ozone layer is in the ..... layer.
- 4 Fossils always exist in the ..... rocks.
- 5 The elements of group 7A are called .....
- 6 ..... is considered from the safe places that has endangered species.
- 7 The bond between water molecules is called ..... bond.
- 8 What is left by the living organism's body after its death in the sedimentary rocks is known as .....



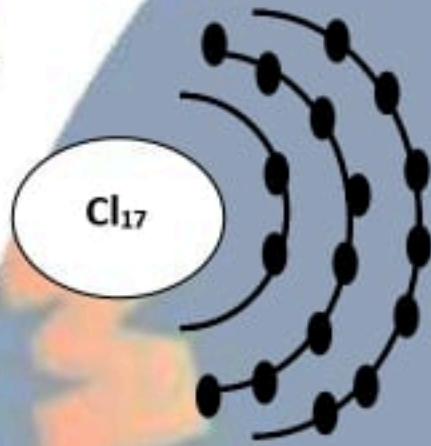




### Model Answer

#### Answer Q1

- A- 1- Hydrogen  
2- vertically  
3- twice  
4- stratosphere  
B- 1-



- 2- The group number: 7A      3- Period number: 3

#### Answer Q2

- A) 1- Cancelled    2- True    3- False    4- True    5- True  
B) 1- Fig A    2- Fig B    3- Group 2A - Period 3

#### Answer Q3

- 1- Extinction  
2- Dodo Bird  
3- Electronegativity  
4- Cancelled  
5- Natural protectorates

#### Answer Q4

- 1- cancelled  
2- less - more  
3- stratosphere  
4- sedimentary  
5- halogens  
6- natural protectorates  
7- hydrogen  
8- Remain fossils

